

I claim:

1. A data encryption system, comprising:  
a source having a chromatic dispersion encrypter;  
a destination having a chromatic dispersion decrypter; and  
5 a transmission system operatively coupling the source and the destination.
2. The system of claim 1, wherein the chromatic dispersion encrypter induces a first chromatic dispersion on data prior to transmission of the data on the transmission system.
3. The system of claim 2, wherein the chromatic dispersion decrypter  
10 induces a second chromatic dispersion on the data after transmission of the data on the transmission system.
4. The system of claim 3, wherein the second chromatic dispersion substantially negates the first chromatic dispersion.
5. The system of claim 3, wherein the first chromatic dispersion and  
15 the second chromatic dispersion are substantially equal and opposite.
6. The system of claim 1, wherein the chromatic dispersion encrypter and the chromatic dispersion decrypter are etalon-based.
7. A data encryption method, comprising:  
encrypting data using a first chromatic dispersion;  
20 transmitting the data; and  
decrypting the transmitted data using a second chromatic dispersion.

8. The method of claim 7, wherein the second chromatic dispersion substantially negates the first chromatic dispersion.

9. The method of claim 7, wherein the first chromatic dispersion and the second chromatic dispersion are substantially equal and opposite.

5 10. A data encryption method, comprising:  
at a source, inducing upon data a first chromatic dispersion;  
transmitting the data from the source to a destination; and  
at the destination, inducing upon the data a second chromatic dispersion,  
wherein the second chromatic dispersion substantially negates the first chromatic  
10 dispersion.

11. The method of claim 10, wherein the first chromatic dispersion encrypts the data.

12. The method of claim 10, wherein the second chromatic dispersion decrypts the data.

15 13. The method of claim 10, wherein the first inducing step is performed using an etalon.

14. The method of claim 10, wherein the second inducing step is performed using an etalon.

20 15. A data encryption method, comprising:  
inducing upon data a first chromatic dispersion without transmitting the data on an optical link;  
transmitting the data with the first chromatic dispersion on an optical link;

inducing upon the data with the first chromatic dispersion a second chromatic dispersion, the second chromatic dispersion substantially negating the first chromatic dispersion.

5       16.   The method of claim 15, wherein the first chromatic dispersion encrypts the data.

      17.   The method of claim 15, wherein the second chromatic dispersion decrypts the data.

      18.   The method of claim 15, wherein the first inducing step is performed using an etalon.

10       19.   The method of claim 15, wherein the second inducing step is performed using an etalon.

      20.   A data encryption method, comprising:  
          receiving data;  
          encrypting the data using a first chromatic dispersion;  
15       transmitting the encrypted data.

      21.   The method of claim 20, wherein the step of encrypting the data comprises inducing upon the data the first chromatic dispersion.

      22.   The method of claim 20, wherein the step of encrypting the data is performed using an etalon.

20       23.   The method of claim 20, wherein the step of encrypting the data is performed without transmitting the data on an optical link.

24. The method of claim 20, further comprising receiving the encrypted data; and decrypting the encrypted data using a second chromatic dispersion.

25. The method of claim 24, wherein the step of decrypting the data comprises inducing upon the data the first chromatic dispersion.

5 26. The method of claim 24, wherein the step of decrypting the data is performed using an etalon.